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ERSS Perspective

Race and the politics of energy transitions

Once again, the issue of race is dominating world events. Acts of police violence and the removal of statues of slave traders have drawn attention to issues of structural inequality, institutional racism and historical exploitation, particularly that which is associated with colonialism. I want to argue in this perspective article that the study of energy transitions needs to take issues of race more seriously than it has generally done so to date, and I want to point to some ways in which it can do so, building on emerging work and incorporating insights from other areas of scholarship and activism. I suggest four areas of intersection between race and the study of energy transitions as possible entry points for deepening engagement with these issues.

The first entry point is the historically racialised production and contemporary reproduction of energy systems and regimes. Though there has been some recent attention to the need to decolonise transitions [1, 2], there is significant further work to do in uncovering and explaining the racialised ways in which wealth from the exploitation of energy resources (and the labour involved in their extraction) underpins today's global energy economy [3]. Calls for a new industrial revolution to decarbonise the economy often draw inferences from the first industrial revolution [4]. Yet historians have described a 'slave mode of production' to understand how 'the slave trade and African slavery in the New World were central to the development of industrial capitalism in England in the eighteenth century' [5, 72, 73], while other scholarship has explored slavery's role in the making of American capitalism [6].

Lennon assembles a useful framework for decolonizing our understanding and engagement with energy transitions inspired by BLM (Black Lives Matter) exploring both how 'colonialism transformed energy – the ability to change matter –into a commoditized form that made certain lives not matter' [1, p. 18], while also demonstrating the ways in which contemporary practices reproduce colonial hierarchies, including with regard to the disproportionate impact of the toxic elements of production of 'clean energy' on black lives and it might be added immigrant labour [7]. Regarding the colonial project, for example, Lennon demonstrates how 'The combustion engine, the electricity grid, and the assembly line …created new opportunities for the wealthy white men who controlled them to transform matter in ways that further mechanized black bodies in the pursuit of profit' [1, p. 25]. The issue then is not only the means by which slavery underpinned the apparatus of energy extraction and exchange; it helped also to constitute the foundation of modern 'energy' as it contemporarily understood: as lifeless, exchangeable units of power devoid of social origin.[1]

In conceptualising the social foundations of transitions in energy economies Tilley and Shilliam's discussion of 'raced markets' provides one vantage point from political economy showing how 'race functions in structural and agential ways, integrally reproducing raced markets and social conditions' [8, 534]. Hence though 'race' may have begun as fiction, an invention of Europeans in the service of colonisation, 'the fiction of race became material over time, reproduced in relation to the manifold raced markets of the

global political economy' [8, p. 534]. This is true of the historical underpinnings of todays' fossil fuelled global economy where, as McGee and Greiner show, 'fossil fuels and racial oppression are fused to one another' in a form that 'changes the economic character of racial capitalism' [9]. In relation to climate change, Gonzalez's work provides an understanding of racialised markets by analysing the interface between racial capitalism, climate injustice and climate displacement, excavating the ways in which 'racialized communities all over the world have borne the brunt of carbon capitalism from cradle (extraction of fossil fuels) to grave (climate change)'. This forms the basis of a 'race-conscious' analysis that points to the 'commonalities among seemingly distinct forms of oppression in order to forge the alliances necessary to achieve just and emancipatory outcomes' [10, p.1].

Patel and Moore's [11] notion of 'cheapness' also helpfully points to the invisibilisation of race, gender and class in the everyday generation of wealth by which the costs (of energy production) are externalised, distanced and passed onto to poorer groups, as well as premised upon historically uneven patterns of development. Such accounts, through their emphasis on labour exploitation, disturb conventional historical accounts of energy transitions which privilege the role of technology and innovation by revealing their racial underpinnings and challenging dominant, but de-politicising, narratives about the evolution and constitution of the fossil fuel energy regime. Notwithstanding the racialised extractivism which a renewable energy boom might portend, Daggett argues, for example, that 'Fossil domination is historically unique in its marriage of racial capitalism and imperialism' because of the historically specific ways in which 'labour extraction and domination were the main catalysts for transition' [12, p.1]. Others have added to this by emphasising the importance of property regimes to the maintenance and reproduction of racial capitalism, including in the energy realm. Bosworth [13] explores this in relation to the North American pipeline politics, for example.

As scholars of transition, we need to be clear that the energy wealth of many richer countries is a product first of looting and then the entrenchment of colonial relations of dependency and the institutions set up to oversee and preserve it [14, 15]. These are forms of historical 'lock-in' to use a favoured phrase in the transitions community [16], that need to be foregrounded in order to appreciate the current constitution of the global (energy) economy: how and *for whom* exchange is organised, who sets and enforces the rules of the game around trade and industrial policy (as they apply to energy) and who gets punished for their violation of them. In the development community, this is referred to as 'kicking away the ladder' (of development): the strategy by which richer countries deny poorer ones the very means they themselves used to build up their own wealth (through protectionism, support to infant industries, loose forms of intellectual property rights etc) [17]. This enables an appreciation of why debates about aid, technology transfer and capacity building for energy systems in the global South (with all their attendant presumptions about what can learned and emulated from the global North) often ring hollow in the absence of discussions about historical responsibility, ecological debts or even reparations [18].

To understand these historical processes better, there are several possible entry points. Contributions from ecological economics to debates about ecologically uneven exchange provide us with the tools to begin to understand *whose* wealth is being exchanged and on *what* terms. These highlight the patterns of ecologically uneven exchange in both contemporary settings and the issues of accumulated carbon and other debts [19, 20, 21]. These build, in turn, on earlier, but still relevant work from Latin America on dependency theory and the patterns of extraction between the core and the periphery of the global economy where energy resources were a critical source of exchange [22, 14]. The issue is not just extraction and exchange, but the reinvestment of profits in energy regimes. The circuits of finance capital by which profits from slavery, plantations and colonial dispossession were first acquired and then recirculated, (including of course the vast compensation payments made to former slave owners), are ripe for analysis regarding the ways in which they were invested in the industrial revolution and a series of major energy infrastructures such as railways [23, 5](. It is no coincidence that the industrial revolution was funded by a few people who held the power to issue essentially infinite credit [24] including of course, to finance the experiments of James Watt, inventor of the steam engine.

The question though is not just of colonialism as an inter-state and geo-political project, but also patterns of 'internal colonialism' [75]. This is an idea elaborated to explain the racial effects of poverty and isolation on indigenous communities in Latin America, but then taken up by scholars of race in North America. In Latin America, for example, emerging work on 'extractivismo' [25] including its renewable energy variant: 'renewable extractivism' [26, 27] builds on earlier work on fossil based extractivism [28] in revealing how energy economies graft on to historical racial inequities between, in this case, European descendants and indigenous populations. Alongside ongoing colonial practices being employed by former European colonisers, such as France's nuclear colonialism in the Pacific through nuclear testing in French Polynesia [29], for example, the language of colonialism also surfaces in debates about China's role in energy extraction in Africa amid contested references to the 'new colonialism' [30]. Other scholars invoke the term 'resource colonialism' to describe extraction of resources such as oil from the tar sands in Canada [31] as well as 'climate colonialism' to account for the privileging of strategies of green grabbing to secure land, forests and other resources in the global South as sinks over the more challenging task of reducing emissions in the global North [32]. Fuller engagement with these bodies of work can help to embellish and enrich accounts of the histories of energy transitions [33, 34, 35] and their legacies that contemporary projects of energy transition inherit. What this points to are fruitful and important lines of enquiry about the uneven and combined development of energy transitions: not just their international relations, but the global circulations of trade, production and finance between and across regions and classes which bind them together, historically and in the contemporary context.

A second entry point for researching race and energy transitions is the governance of energy transitions through racialised governmentalities. Attention to the ways in which incumbent regimes ossify hierarchies of social and economic power pushes us to look at the social foundations of the state, whereby the state is often a crystallisation of dominant social relations. Marxist theorists have thought about this predominantly

in terms of class [36], but less attention has been paid to critical race theory of the state which explores how the state both 'shapes and is shaped by racial conflict' [37, p. 555]. Work on the forms of exclusion from decision-making around energy policy and projects from the literature on environmental justice and environmental racism [38, 74, 77] offers one obvious entry point in advancing our understanding of racialised energy governance [39, 40, 41, 42](. This includes the experience of indigenous groups in contesting siting decisions such as the positioning of nuclear waste dumps on Native American reserves [43, 76] and struggles for recognition justice by aboriginal communities in Australia [44]. In India, up until 2013, the Land Acquisition Act: a piece of colonial legislation dating from 1984, was frequently invoked to override objections to new energy projects, allowing the union or a state government to acquire private land for the purpose of industrialisation and the development of infrastructural facilities, often leading to the dispossession of tribal communities [45].

Points of intersection with transitions scholarship include the growing attention to social power [46], elite power [47] and institutional forms of power [48], mainly centred around the state. As Johnstone and Newell put it [49, p. 78] 'who sets the terms of transition and how, is often a product of broader configurations of social, economic and military power that are crystallised in the state in particular patterns of representation and privileged access to decision-making', including the racialised constitution of incumbency in many settings. This refers not just to the exercise of power by overtly racist leaders such as US President Donald Trump or President Jair Bolsonaro in Brazil, who seek to roll back or over-turn environmental protections for poorer communities of colour, or actively destroy their livelihoods through accelerated deforestation in the case of Brazil's indigenous peoples with reference to claims of racial superiority. It refers also to the systematic and institutionalised forms of privilege which concentrate decision-making in unelected chambers (such as the UK's House of Lords made of up of landed gentry with historical connections to the slave trade) [50], alongside poor levels of presentation of BAME groups in parliaments, which mean considerable political work is required to undo historical inequities in participation through positive discrimination, for example. But this engagement needs to go beyond a focus on the state and its attendant exclusions, and also focus on the ways in which institutions of global governance, such as the World Bank, lock-in energy pathways built on cheap (often non-white) labour and unsustainable extraction.

A third entry point is the socially uneven impacts of energy transitions pathways. If attention to questions of race in the governance of energy transitions serves to highlight procedural injustices, scholarship on climate and energy justice can help understandings of the uneven distribution of the costs and benefits of different energy pathways. Work on climate justice helps both in documenting uneven impacts to date, the ways in which a warming world will further impoverish racially excluded groups, as well as how those issues are often screened out of policy debates [51], as the contentious politics of 'loss and damage' discussions in the UN climate negotiations currently show [52]. The growing body of work which connects the social impacts of energy transitions in different parts of the world [53], and on energy justice more broadly [54, 55], draws attention to how costs are displaced and benefits accrued in uneven ways, is helpful here. For

example, how the drive towards electrification may (inadvertently) intensify racialised economies of extraction of key minerals such as Cobalt [56].

Scholarship on energy access can add useful insights here about who is left behind by energy transitions [57, 58]. For example, Reames [59] explores racial disparities (among others) in fuel poverty in relation to urban residential heating, while Lyubich [60] identifies a 'race gap' in residential energy expenditures where black households have higher residential energy expenditures than white households in the US, even after controlling for things like income, household size, homeowner status, and city of residence. A study by Sunter et al uncovers a similar trend. They show that 'Black- and Hispanic-majority census tracts show on average significantly less rooftop PV installed. This disparity is often attributed to racial and ethnic differences in household income and home ownership. In this study, significant racial disparity remains even after we account for these differences' [61, p. 71].

A fourth entry point is the racialised politics of contestation and resistance. While there is increasing attention in the study of transitions to the role of civil society mobilisation, environmental justice movements have pointed out for a long time the need for more inclusive activism which takes into account the lived experienced of marginalised communities of colour. For example, while some movements focus on legal activism and work with corporations, disenfranchised communities are often weary of moving struggles with energy industries to arenas of power to which they often have little access and poor representation [62].

Historically, the environmental movement has been criticised for 'white supremacist' tendencies manifested in exclusionary advocacy for 'fortress conservation', distancing others through 'lifeboat ethics' which emphasise population growth in the global South and other practices of dispossession [13]. These issues are being raised again now in relation to Black Lives Matter and critiques, for example, of the 'racial blindness' of movements such as Extinction Rebellion (XR) whose strategy of mass arrest represents particular challenges from groups for whom there is a history of mistreatment by the police. In an open letter to XR by a collection of movements and groups under the banner 'Wretched of the Earth', emphasis was placed on the need to underpin calls for energy system transformation with a more nuanced account of differentiated responsibility and exposure to the harms of inaction. They stated, 'The economic structures that dominate us were brought about by colonial projects whose sole purpose is the pursuit of domination and profit. For centuries, racism, sexism and classism have been necessary for this system to be upheld, and have shaped the conditions we find ourselves in'. Moreover, it was stated, 'In order to envision a future in which we will all be liberated from the root causes of the climate crisis – capitalism, extractivism, racism, sexism, classism, ableism and other systems of oppression – the climate movement must reflect the complex realities of everyone's lives in their narrative' [63]. There are challenges then for scholar-activists engaging with movements through their work and activism, but there is also work to do in comprehending movements for energy and society wide transformations and their histories and internal dynamics of struggle, including around questions of race.

Moving forward

In practical, concrete terms, beyond these useful theoretical frames of reference and activist experiences, taking race seriously could mean practices as mundane as being alert and actively asking about race in interviews, seeking to include a diversity of stakeholders in surveys, focus groups, consultations and modelling exercises to get a more balanced and inclusive perspective of the everyday as well as structural inclusions and exclusions that characterise energy transitions. More fundamentally, it suggests the need to confront 'methodological whiteness' by checking epistemological and ontological premises for Eurocentrism and racial connotations [64]. So, from studies of behaviour change, social acceptance and attitudes towards energy transitions, to studies of energy decision-making and the impacts of societal energy choices, there is genuine scope for thinking through race in a way which becomes a habitual part of doing research, rather than an add-on or a gesture to placate critics. Moreover, given the omnipresence of these dynamics, attention to questions of race in energy transitions should not be a responsibility borne solely by those working on the politics and political economy of energy transitions or addressing the role of social power. More broadly and analytically, for transition scholars, this means doing the difficult work of thinking through race in terms of causes (questions of production and extraction), impacts (uneven impacts of transitions, and failures to act, including around climate change), governance (questions of participation and representation and racialised patterns of inclusion and exclusion both from policy processes and access to energy systems themselves) and resistance (questions of respecting diverse histories and the negotiation of difference around strategy).

In conclusion, the extent to which race is the primary, defining feature of questions of procedural and distributional justice in relation to the production and governance of energy transitions and resistance to them, will depend on context. In some societies it is clearer than others. Work on South Africa's experience of 'electric capitalism' [65] and the apartheid era drive for energy autonomy to cushion the effect of international sanctions, provides a particularly striking example [66]. But energy poverty and the location of energy sacrifice zones is racialised in many other places [67], as the examples given here make clear. The particular configuration of race in energy transitions can draw on some of the literature and resources briefly surveyed here, and many more besides, but they need to be located within specific contexts to understand the peculiarities of their role in shaping energy transitions and the ways in which they might be contested.

Finally, race of course intimately intersects with gender, caste and class and many other exclusions [68, 69, 58], so the call here for further attention to race in the study of (energy) transitions is not a call to reify or fetishize race above all other social cleavages. McDonald argues in relation to South Africa that 'The fact that many environmentally damaging neo-liberal policy decisions are now being designed and imposed by a new black elite merely highlights the increasingly class-based nature of environmental politics' [65, p. 256], while Pellow and Brulle claim 'Scholars cannot understand-and policymakers prevent-environmental injustices through a singularly focussed framework that emphasises one form of inequality to the exclusion of others' [70, p.297]. But race has to be an increasing part of our accounts of how the world we seek to

explain and model has come to be; and any action-oriented research which seeks to change it will have to acknowledge the need to ensure that movements for change, calls for just transitions and broader social transformations address these deep seated inequalities and exclusions, both as a matter of principle, and as a precondition for the broader social acceptance of the urgent need for radical energy transitions.

What I am suggesting here, above all, is a series of critical and uncomfortable conversations. These are going on in the wider society of which we are part and to which we seek to make a contribution. The point is definitely not to accuse, but rather to reflect and engage. Having written a piece over 15 ago about the centrality of race and class to the study of global environmental inequality [71], I know for sure I have not done nearly enough myself to engage with these issues in my own work. I am also aware as a white male Professor, I am probably not the best person to be drawing attention to this agenda for lack of direct experience of some of the injustices described here (though of course the same could be said for many other practices of exclusion and degradation we analyse and seek to contest in our work as social scientists). It is also the case that those of us with privileges that come with such identities, perhaps also bear a responsibility to use any power we have to raise these issues out of solidarity and to do so in a way which does not just add to the burden of BAME colleagues who are often and otherwise expected to raise the profile of issues of race. My hope is that we can have difficult and frank, critical but ultimately inclusive, supportive and constructive conversations about the place of race in the study of energy transitions and the study of sustainability transitions more broadly.

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